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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,329	06/05/2001	Steven A. Morley	010327	7520

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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
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EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,329

Applicant(s)

MORLEY ET AL.

Examiner

Andy S. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

A). Claim 21, lines 1-2 recite both an apparatus, and a method. It is unclear whether to the Examiner how the recited elements of the claim can correspond to both. Correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., (hereinafter referred to as "Kim") in view of Park et al., (hereinafter referred to as "Kim").

Kim discloses a method of decimation of a digital image, the digital image represented by a plurality of pixels (Kim: figure 3B), the method comprising: dividing the digital image into a plurality of blocks (Kim: column 6, lines 32-65); and decimating the blocks (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 1. However, Kim fails to disclose decimating certain ones of the blocks based upon predetermined criteria. Park discloses the decimation of selected blocks of the digital images based on predetermined criteria (Park: column 6, lines 45-60) in order to preserve features of blocks (Park: column 3, lines 20-35) by preventing color bleeding (Park: column 5, lines 45-55), as in the claim. Accordingly, given the Park teaching, it would have been obvious for one of ordinary skill in the art to incorporate Park's teaching for decimating of blocks based on predetermined criteria, into the Kim decimation method in order to prevent color bleeding and thus preserve features of blocks. The Kim method, now incorporating Park's selective decimation as based predetermined criteria, has all of the features of claim 1.

Regarding claim 2, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria is a function of the chrominance information of the block (Park: column 6, lines 50-55), as in the claim.

Regarding claim 3, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being contrast of the block (Park: column 7, lines 1-15), as in the claim.

Regarding claim 4, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being the level of detail in the block (Park: column 7, lines 1-15), as in the claim.

Regarding claim 5, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being a function of the desired bit rate (Park: column 13, lines 55-68), as in the claim.

Regarding claim 6, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has the dividing using adaptive block size DCT operations (Kim: column 10, lines 20-55), as in the claim.

Regarding claim 7, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has separating the image into luminance and two chrominance signals (Kim: column 3, lines 35-40), as in the claim.

Regarding claims 8-9, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has filtering the elements of the plurality blocks along the columns (Kim: column 12, lines 8-61), as in the claims.

Regarding claims 10, the Kim method, now incorporating Park's selective decimation as based predetermined criteria, has pixel to frequency and frequency to pixel conversion (Kim: column 3, lines 25-50), as in the claim.

Kim discloses a apparatus for decimation of a digital image, the digital image represented by a plurality of pixels (Kim: figure 2A), the apparatus comprising: means for dividing the digital image into a plurality of blocks (Kim: column 6, lines 32-65); means for decimating the blocks (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 11. However, Kim fails

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to disclose decimating certain ones of the blocks based upon predetermined criteria. Park discloses the means for decimating selected blocks of the digital images based on predetermined criteria (Park: column 6, lines 45-60) in order to preserve features of those selected blocks (Park: column 3, lines 20-35) by preventing color bleeding (Park: column 5, lines 45-55), as in the claim. Accordingly, given the Park teaching, it would have been obvious for one of ordinary skill in the art to incorporate Park's teaching for decimating of blocks based on predetermined criteria, into the Kim decimation apparatus in order to prevent color bleeding and thus preserve features of blocks. The Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has all of the features of claim 11.

Regarding claim 12, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria is a function of the chrominance information of the block (Park: column 6, lines 50-55), as in the claim.

Regarding claim 13, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being contrast of the block (Park: column 7, lines 1-15), as in the claim.

Regarding claim 14, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being the level of detail in the block (Park: column 7, lines 1-15), as in the claim.

Regarding claim 15, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being a function of the desired bit rate (Park: column 13, lines 55-68), as in the claim.

Regarding claim 16, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the dividing using adaptive block size DCT operations (Kim: column 10, lines 20-55), as in the claim.

Regarding claim 17, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has separating the image into luminance and two chrominance signals (Kim: column 3, lines 35-40), as in the claim.

Regarding claims 18-19, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has filtering the elements of the plurality blocks along the columns (Kim: column 12, lines 8-61), as in the claims.

Regarding claims 20, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has pixel to frequency and frequency to pixel conversion (Kim: column 3, lines 25-50), as in the claim.

Kim discloses a apparatus for decimation of a digital image, the digital image represented by a plurality of pixels (Kim: figure 2A), the apparatus comprising: a divider for dividing the digital image into a plurality of blocks (Kim: column 6, lines 32-65); a decimator for decimating the blocks (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 1. However, Kim fails to disclose decimating the certain ones of the blocks based upon predetermined criteria. Park discloses the means for decimating selected blocks of the digital images based on predetermined criteria (Park: column 6, lines 45-60) in order to preserve features of those selected blocks (Park: column 3, lines 20-35) by preventing color bleeding (Park: column 5, lines 45-55), as in the claim. Accordingly, given the Park teaching, it would have been obvious for one of ordinary skill in the art to incorporate Park's teaching for decimating of blocks based on

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predetermined criteria, into the Kim decimation apparatus in order to prevent color bleeding and thus preserve features of blocks. The Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has all of the features of claim 21.

Regarding claim 22, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria is a function of the chrominance information of the block (Park: column 6, lines 50-55), as in the claim.

Regarding claim 23, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being contrast of the block (Park: column 7, lines 1-15), as in the claim.

Regarding claim 24, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being the level of detail in the block (Park: column 7, lines 1-15), as in the claim.

Regarding claim 25, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the predetermined criteria being a function of the desired bit rate (Park: column 13, lines 55-68), as in the claim.

Regarding claim 26, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has the dividing using adaptive block size DCT operations (Kim: column 10, lines 20-55), as in the claim.

Regarding claim 27, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has separating the image into luminance and two chrominance signals (Kim: column 3, lines 35-40), as in the claim.

Regarding claims 28-29, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has filtering the elements of the plurality blocks along the columns (Kim: column 12, lines 8-61), as in the claims.

Regarding claims 30, the Kim apparatus, now incorporating Park's selective decimation as based predetermined criteria, has pixel to frequency and frequency to pixel conversion (Kim: column 3, lines 25-50), as in the claim.

Kim discloses a method of converting a digital image of a first format to a digital image of a second format (Kim: column 12, lines 63-65), the digital image represented by a plurality of pixels (Kim: figure 3B), the method comprising: dividing the digital image into a plurality of blocks (Kim: column 6, lines 32-65), wherein each block may be represented by a plurality of columns, each column comprising a plurality of elements (Kim: column 12, lines 9-40); and filtering each column of the block (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 31. However, Kim fails to disclose selectively filtering certain ones of the blocks based upon predetermined criteria for 4:4:4 to 4:2:2 to 4:2:0 conversion, as in the claim. Park discloses the filtering of selected blocks of the digital images for 4:4:4 to 4:2:2 to 4:2:0 conversion (Park: column 5, lines 40-55) based on predetermined criteria (Park: column 6, lines 45-60) in order to preserve features of blocks (Park: column 3, lines 20-35) by preventing color bleeding (Park: column 5, lines 45-55), as in the claim. Accordingly, given the Park teaching, it would have been obvious for one of ordinary skill in the art to incorporate Park's teaching for filtering of blocks based on predetermined criteria, into the Kim converting method in order to prevent color bleeding and thus preserve features of blocks. The Kim method, now incorporating Park's selective filtering as based predetermined criteria, has all of the features of claim 31.

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Regarding claim 32, the Kim method, now incorporating Park's selective filtering as based predetermined criteria, has weighting the columns (Kim: column 12, lines 25-36), as specified.

Kim discloses a method of converting a digital image of a first format to a digital image of a second format (Kim: column 12, lines 63-65), the digital image represented by a plurality of pixels (Kim: figure 3B), the method comprising: separating the digital image into Y, Cr, Cb components (Kim: column 3, lines 35-40); dividing the Cb, Cr components into a plurality of blocks (Kim: column 6, lines 32-65) utilizing an adaptive block size discrete cosine transforms (Kim: column 10, lines 10-50), wherein each block may be represented by a plurality of columns, each column comprising a plurality of elements (Kim: column 12, lines 9-40); and filtering each column of the block (Kim: column 12, lines 60-67; column 13, lines 1-10), including weighting the columns (Kim: column 12, lines 20-40), as specified in claim 33. However, Kim fails to disclose selectively filtering certain ones of the blocks based upon predetermined criteria for 4:4:4 to 4:2:2 to 4:2:0 conversion, as in the claim. Park discloses the filtering of selected blocks of the digital images for 4:4:4 to 4:2:2 to 4:2:0 conversion (Park: column 5, lines 40-55) based on predetermined criteria (Park: column 6, lines 45-60) in order to preserve features of blocks (Park: column 3, lines 20-35) by preventing color bleeding (Park: column 5, lines 45-55), as in the claim. Accordingly, given the Park teaching, it would have been obvious for one of ordinary skill in the art to incorporate Park's teaching for filtering of blocks based on predetermined criteria, into the Kim converting method in order to prevent color bleeding and thus preserve features of blocks. The Kim method, now incorporating Park's selective filtering as based predetermined criteria, has all of the features of claim 33.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Canfield discloses a digital video preprocessor for vertical filtering. Hrusecky discloses a multi-format reduced memory video decoder with adjustable polyphase expansion filters. Nie discloses a circuit for filtering and decimating a video signal.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2613

ANDY RAO
PRIMARY EXAMINER

asr
June 22, 2004